

**The Silent Speaker: The Impact of Emojis on Nonverbal Communication During a
Pandemic**

Senior Research Thesis

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By

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Abstract

The COVID-19 pandemic forced many individuals to communicate differently. Due to an increase in online-communication, individuals are missing prosodic cues, or cues that come from someone's voice patterns, which give meaning to sentences. This study examined if emoticons (emojis) influenced sentence interpretation and whether individuals used emojis differently during the pandemic. Introductory psychology students ($n=98$) took an online survey from February 12th, 2021 to April 2nd, 2021. This study assessed emoji usage, and tested participants' emotion ratings of sentences as more positive or negative depending on the presence of a smiley face emoji, a frowny face emoji or no emoji. I found that a majority of the participants used emojis in their daily text messages. Many participants reported no change in emoji usage or perceived emotion of emojis due to COVID-19, but when asked to give details, they reported using fewer positive emojis, like the smiley emoji, and more negative emojis, like the sad and crying emoji. Participants were told to rate the emotional perception of sentences that had either a smiley-face emoji, a frowny-face emoji or no emoji at the end and were from either a perceived familiar person or an unfamiliar person. Participants interpreted sentences differently depending on the emoji paired with the sentence (smiley, frowny, no emoji) and on the familiarity of the person who sent it (familiar/unfamiliar). These results suggest that people interpret sentences differently when emojis are present. The participants perceived the smiley emoji as being more positive, and texts from familiar people were also perceived as being more positive. This is important because emojis may be similar to prosodic cues, in that they help reveal the intentions behind someone's sentences, which could help remove ambiguity in online communication.

Keywords: Emojis, Communication, Emotion, COVID-19, Familiarity, Gender

The Silent Speaker: The Impact of Emojis on Nonverbal Communication During a Pandemic

Since March 2020, the United States has been experiencing the COVID-19 pandemic, and by the end of April 2020 all 50 states were in lockdown (BBC News, 2020). During this lockdown schools, colleges, and jobs moved online, face-to-face communication was greatly reduced, and online communication increased. More individuals were texting, emailing, taking online classes, and spending time on their computers or tablets during the pandemic (Emerson, 2020; Kim, 2020). While individuals have been increasing their online communication over the years, the pandemic may have amplified online communication. With this amplification of communication, individuals may change how they talk to each other through these online channels.

In the years leading up to COVID-19, individuals carried out more face-to-face conversations, but there was still an increase of email and other online communication (Byron, 2008). Past research found that in these face-to-face communications, the verbal aspect conveyed only 7% of the communication and the other 93% was accounted for by facial cues and prosody (how one speaks) (Archer & Akert, 1977; Mehrabian, 1972). Prosody has also been shown to portray emotion in face-to-face communication (Banse & Scherer, 1996). Furthermore, Archer and Akert (1977) found that interpretation of spoken sentences is not accurate when the text or vocal stimuli is only words. Since words alone cannot convey meaning and since 93% of the emotion that is conveyed in speech is in the paralinguistic cues, then nonverbal communication may add emotions to these sentences helping portray the meaning of the text.

Since these paralinguistic cues may help sentence interpretation, it is important to examine prosody and how it may connect to nonverbal communication. Prosody mainly consists

of the auditory components of one's speech (Rossi, 2020). Rossi (2020) defines some key parts of prosody as a sentence's "phrasing, information structure, pragmatic function," and intonation (pitch), which are all forms of interactional properties. Furthermore, there are five types of prosody, three being intrinsic prosody, syntactic prosody, and a change in intonation (Merewether & Alpert, 1990). Past studies have shown that these three main types of prosody help portray the emotion intent of a sentence and helps portray what words are more important in a sentence (Alpert & Anderson, 1977; Cosmides, 1983; Friedhoff, Alpert & Kurtzberg, 1962; Lieberman & Michaels, 1962). Finally, facial expressions help portray emotion in verbal communication and may have a connection to prosody based on intonation (Borod, Koff, Lorch & Nicholas, 1985). This study will examine if emojis, that parallel facial expressions, can add emotion to a sentence when placed at the end of a sentence.

When communicating in person, one's voice and body language can help reveal paralinguistic cues, but when communication is online many of these cues are lost. For example, the intonation, or pitch, of sentences is lost when communication gets transferred online. When this prosody is lost, it may be hard for an individual to decipher the meaning behind the text; one may be left wondering if the text is serious or sarcastic. Another example may be seen through a change in the social aspects of communication. For example, some social aspects that may be lost are the personalization of messages, the status of the person writing the text, the social influence, and the inhibition of verbal behavior (Kiesler, Siegel & McGuire, 1984). This study examined if emojis can be a way to include some of this prosody that was originally lost when transferring to online communication and see if the social cue of familiarity can affect sentence interpretation.

There are many different forms of nonverbal communication; individuals may email, text, and chat on different forms of social media or online chatrooms. Past studies have shown that writing is more formal than speech (Baron, 2008). In order to make writing less formal, people have increased their use of nonverbal cues. Nonverbal cues, such as emoticons, symbols and asterisks, have helped portray emotions, emphasis, and intensity in nonverbal communication (Byron, 2008; Thompson, Mackenzie, Leuthold & Filik, 2016). This study will focus on the usage of emojis during the pandemic and how this usage has been affected by COVID-19. Emojis are an updated version of the emoticons; in the past emoticons were a combination of letters and symbols to create a picture of an emotion and over time individuals developed pre-programmed icons to represent the older versions of emoticons, similar to a small picture of an item. These newer icons are called emojis. This study will focus solely on emojis that portray a face, since these emojis may be similar to the facial expressions given in face-to-face communication.

Emoticons have been utilized to portray a variety of emotions, such as irony, anger, happiness, humor, and enjoyment (Derks, Bos & Von Grumbkow, 2008; Kalman & Gergle, 2014; Thompson et al., 2016). In addition, many studies have found that when emoticons and emojis are present it increases the enjoyment of communicating and causes an increase in arousal (Thompson et al., 2016; Walther & D'Addario, 2001). Since individuals are experiencing less face-to-face communication than they normally would during the COVID-19 pandemic, there may be an increase in emojis in their online conversations to replace the enjoyment and arousal they may have been missing. People most commonly use the smile emoji, wink face emoji, and laughing emoji (Provine, Spencer & Mandell, 2007; Thompson et al., 2016; Walther &

D’Addario, 2001). This study will include these three emojis and examine other emojis that may convey normative emotional states to see if they are being used more often during the pandemic.

There has been continuous debate on which gender uses emojis more often. Women mainly use emojis and emoticons to communicate with others and men will mainly use emojis to portray information (Byron, 2008; Derks et al., 2008; Walther & D’Addario, 2001). In addition, these past studies revealed that women tend to use emojis more than men, especially when there is only one emoji used in the sentence (Byron, 2008; Chen, Lu, Shen, Ai, Liu & Mei, 2017; Derks et al., 2008; Walther & D’Addario, 2001; Wolf, 2000). Furthermore, women used more face-related emojis (Chen et al., 2017). But a study has revealed that if men are in mixed-gendered groups they will increase their usage of emojis (Chen et al., 2017).

In addition, there has been mixed research on the interpreted valence of emojis when examining gender. A past study found that women view emojis as being more positive (Wolf, 2000), while another study found that men viewed emojis as being more positive (Jones, Wurm, Norville & Mullins, 2020). Finally, another study found no difference between men and women’s perception of emojis (Herring & Dainas, 2018). This current study examines whether gender impacts the amount of emoji usage and the perception of the emojis’ portrayed emotion.

Another demographic that may be pertinent to the study is familiarity. Familiarity of the person receiving a message has shown to affect emoji usage. A past study revealed that the more familiar the person was with the receiver, the more emojis they included in the sentences (Derks et al., 2008). This study will examine if the relationship with the person who sends a text affects the emotional perception of a sentence. For example, participants may rate their perceived emotion of a text differently if it came from someone they were more familiar with compared to someone they barely knew.

One limitation of these past studies is that they mainly focus on email communication (Baron, 2008; Byron, 2008; Kalman & Gergle, 2014; Thompson et al., 2016). Today, there has been an increase in instant messaging and online social media posts (Baron, 2008). Furthermore, past research has found that emails are more centered around tasks, and therefore are more serious than other forms of online communication (Byron, 2008). Since instant messaging is more common among the college-aged generation, and email is seen as being more serious, this study will focus on instant messaging. By examining instant messaging instead of emails, this study may see more emoji usage allowing for a better look at the usage of nonverbal cues during the pandemic.

This study had four hypotheses: (1) If college students use emojis then they will have a perceived change in emoji usage during COVID-19, (2) participants that are women will report more use of emojis compared to participants that are men, (3) participants will rate the emotion of the sentence differently depending on if they are given a smiley emoji, a frowny emoji or no emoji at the end of the sentence, and (4) sentences coming from a familiar person will be rated more positively than sentences coming from an unfamiliar person.

Methods

Participants

118 undergraduate students enrolled in Introductory Psychology at The Ohio State University's Newark campus participated in an online questionnaire and experiment. The final sample consisted of 98 students. Data from 18 participants was removed because they did not speak English as their native language and data from 2 participants was removed because they were older than 40. Of these 98 participants, the average age was 19.41 years ($SD = 2.49$), with a range of 18-34 years. Furthermore, 51.02% of participants identified as male, 45.92% as female,

2.04% as non-binary, and 1.02% preferred not to answer. When examining race, 62 (59.6%) identified as Caucasian, 24 (23.1%) as African American, 3 (2.9%) as East Asian, 3 (2.9%) as Latino, 2 (1.9%) as South Asian, and 4 (4%) as other.

Materials

This study was conducted in the form of an online survey that asked a variety of questions regarding demographics, emoji usage, the emotion of emojis, and how COVID-19 affected emojis. It also included an experiment examining how individuals rated sentences depending on the type of emoji present, and who the sentence was from (a familiar or an unfamiliar person). The study was created using Qualtrics, an online questionnaire software program. The order of the questionnaire was randomized, so participants may have gotten the experiment before the questionnaire portion or the questionnaire portion before the experiment. Finally, this survey was anonymous and gave participants the ability to opt out at any point. Participants were rewarded with class credit for this study.

Questionnaire

The questionnaire included three sections that asked about emoji usage in general, emoji usage during the COVID-19 pandemic, and emotion judgments for emojis.

Emoji Usage. There was a short part of the questionnaire that focused on whether participants used emojis, and the amount of emojis used on a daily basis. If participants answered that they did not use emojis, they did not have to answer any more of the questionnaire portion, because the rest of the questionnaire pertained to emoji usage. Finally, participants were asked to rate their favorite emojis from a list of 13 different emojis (Appendix A). They were also given the option to add their own favorite emoji or say they did not have a favorite emoji.

Emoji Emotion. Participants were given 13 different emojis and asked to choose if the emoji portrayed a positive emotion, a negative emotion or no emotion on a 5-point Likert-type scale, with 1 being more negative and 5 being more positive.

Emoji Usage During COVID-19. The participants were asked if COVID-19 changed the amount of emojis used and if they were seeing themselves using more or less emojis on a 5-point Likert-type scale, with 1 being less emojis and 5 being more emojis. Next, participants were given 13 emojis and asked to select any emojis that they saw themselves using more often since COVID-19. They were able to add their own emojis or say that they did not use more emojis. Finally, participants were given 13 emojis and asked to select any that they used less often during COVID-19, with the ability to add their own emojis or say that they did not use any emojis less often.

Emoji Emotion During COVID-19. In this section participants were asked if they saw a change in emotion response towards emojis. They were then given 13 emojis and asked to select any that they saw as being more positive since COVID-19, with the option to add any not listed or say they did not see any emojis as being more positive. Finally, participants were given 13 emojis and asked to select any that they saw as being more negative since COVID-19, with the ability to add their own emojis or say they did not see any as being more negative since COVID-19.

Experiment

Design Statement. This experiment was conducted using a within-subject design. Participants were randomly given either the experiment or the survey first. The questions in the questionnaire were not randomized, but in the experiment portion, participants were randomly assigned to either the familiar or the unfamiliar section first. Each section began with instructions

for the familiar or unfamiliar section and then had a trial run of three different sentences. The experiment included 72 sentences, with 36 sentences given for the familiar section and 36 sentences given for the unfamiliar section. These 36 sentences were further divided to include 12 sentences with the smiley face emoji at the end, 12 with the frowny face emoji at the end, and 12 with no emoji at the end. The order of the sentences in each portion of the experiment was randomized.

Procedure. The participants were asked to interpret different prompts as being positive, negative or neutral depending on the type of emojis present on a 5-point Likert-type scale, with 1 being negative and 5 being positive (see Appendix B and Appendix C).

In the familiar portion of the experiment, participants were instructed that the prompts were coming from someone that they would talk to on a daily basis, like family members and friends. While in the unfamiliar portion, participants were instructed that the prompts were coming from someone that they did not see often, like students they met this semester or their boss.

The participants were given a practice trial before each actual trial that consisted of 3 practice problems, one with a smiley face emoji at the end, one with a frowny face emoji at the end, and one with no emoji at the end. This practice sentences let them understand what they were being asked before taking the actual experiment.

Results

Descriptive Data

Emoji usage

Emoji usage was calculated using a yes or no question. 97 (98.98%) participants selected that they used emojis and 1 (1.02%) participant did not use emojis. When rating how often they

used emojis on a scale of 1-5, with 5 being the highest use, the average rating was 3.41 ($SD=.94$), and the overall percentages of participants that choose each category are listed in Table 1. Finally, the data revealed that the emojis that were chosen most often as the participants' favorite were the heart eyes emoji (56.12%), the winky emoji (43.88%), and the smiling-eyes emoji (40.82%), and the least favorites were the crying one-teared emoji (9.18%), the scared emoji (9.18%), and the angry emoji (4.08%).

Emoji Emotion

A one-sample t -test compared the emotion rating for the 13 emojis to 3 (neutral) to see if the emojis are interpreted as carrying emotion (See Table 2). This test revealed that only the sleepy emoji ($M=2.96$, $SD=.73$) did not differ significantly from the neutral emotion of 3 on a 1 to 5 Likert-type scale, $t(97)=-.553$, $p=.582$. The other 12 emojis did differ significantly from the neutral rating of 3, $p's<.003$ (see Table 3). Furthermore, a Bonferroni correction indicated that these findings were significant even when comparing to the correction p -value of .0038. This means that when accounting for error that may have accumulated with analyzing 13 one-sample t -tests, the results stayed the same.

Emoji Usage During COVID-19

When the participants were asked if COVID-19 changed their usage of emojis, 64 (65.31%) responded no, 17 (17.35%) responded yes, and 17 (17.35%) responded they were not sure. Furthermore, when asked if they used more or less emojis during COVID-19, 70 (71.43%) responded that there was no change in emoji usage, 13 (13.27%) used slightly more emojis, 7 (7.14%) used more emojis, 5 (5.10%) used slightly less emojis, and 3 (3.06%) used less emojis (Figure 1). The types of emojis that were used more or less often were also assessed. The emojis that were rated as being used more often were the crying three-tears emoji (31 participants,

31.63%), The frowny emoji (22 participants, 22.45%), and the sleepy emoji (22 participants, 22.45%). The emojis that were rated as being used less often were the smile tongue-out emoji (19 participants, 19.39%), the smiling-eyes emoji (14 participants, 14.29%), and the smiley emoji (14 participants, 14.29%).

Emoji Emotion During COVID-19

Next participants were asked if their emotional response towards emojis changed during COVID-19. When given a yes or no question, 61 (62.24%) participants responded no, 25 (25.51%) responded not sure, and only 12 (12.24%) responded yes (Figure 2). Two more questions assessed the specific emojis that participants rated as being more positive or more negative since COVID-19. The emojis that were rated as being more positive were the smiley emoji (32 participants, 32.65%), the smiling-eyes emoji (29 participants, 29.59%), and the winky emoji (28 participants, 28.57%). The emojis that were seen as being more negative were the angry emoji (36 participants, 36.73%), the frowny emoji (33 participants, 33.67%), and the crying one-teared emoji (32 participants, 32.65%).

Gender

Only the participants that identified as a man or a woman were included in the analysis because there was only a small number of participants that identified as non-binary or preferred not to say. The emojis people used, how often emojis were used, the effect COVID-19 had on emoji usage, and the change in emotional response towards emojis during COVID-19 were examined to see if gender had an effect, using an independent samples *t*-test. There was only one significant difference between men ($M = 3.70$, $SD = .91$) and women ($M = 3.09$, $SD = .91$) when examining how often emojis were being used, $t(92) = -3.239$, $p = .002$, $d = .67$. This reveals that in this study, men reported using emojis more often in a day than women. There was not a

significant difference between men ($M= 1.00$, $SD= .00$) and women ($M= 1.02$, $SD= .15$) when examining if they used emojis in their online communication, $t(93)= 1.055$, $p= .294$.

Furthermore, there was not a significant difference between men ($M= 3.22$, $SD= .82$) and women ($M= 3.13$, $SD= .63$) when it came to a change in usage of emojis during COVID-19, $t(93)= -.576$, $p= .566$, $d= .12$. Finally, there was not a significant difference between men ($M= 1.90$, $SD= .58$) and women ($M= 2.11$, $SD= .57$) when examining the change in emotional perception of emojis during COVID-19, $t(93)= 1.781$, $p= .078$, $d= .37$. This reveals that gender was only a factor when examining how often emojis are used, and that men tend to use emojis more often than women, which contradicts some of the past research.

To further examine if women and men rated emojis differently, an independent samples t -test was used on the 13 emotion ratings of the emojis. There was a significant difference between men ($M= 4.72$, $SD= .54$) and women ($M= 4.13$, $SD= .97$) when examining the ratings of the smile tongue-out emoji, $t(93)= -3.703$, $p< .001$, $d= .75$. There was also a significant difference between men ($M= 4.76$, $SD= .56$) and women ($M= 4.36$, $SD= .91$) when examining the ratings of the smiling-eyes emoji, $t(93)= -2.647$, $p= .010$, $d= .54$. For these two emojis, the men rated the emojis as being perceived as more positive than the women.

Experiment

Familiarity

A repeated-measures ANOVA revealed a significant difference between the rating of the sentences that were said to come from unfamiliar people ($M= 2.815$) and familiar people ($M= 2.899$), $F(1, 97)= 4.012$, $p= .048$, $\eta^2= .040$ (see Figure 3). This means that participants perceived emotions to be more positive when coming from a familiar person than coming from an unfamiliar person.

Emoji

A repeated-measures ANOVA revealed that there was a significant difference in sentence emotion ratings depending on the emoji (smiley, frowny, no emoji), $F(2, 194) = 288.604$, $p < .001$, $\eta^2 = .748$. A pairwise comparison revealed that there was a significant difference between all three groups of emotion, $p < .001$ (see Figure 4). This means that there was a significant difference between the sentences with the smiley emoji ($M = 3.93$) and the frowny emoji ($M = 1.73$), $p < .001$. There was also a significant difference between the smiley emoji ($M = 3.93$) and no emoji ($M = 2.91$), $p < .001$. Finally, there was a significant difference between the frowny emoji ($M = 1.73$) and no emoji ($M = 2.91$), $p < .001$. There was not a significant interaction between the familiarity and the type of emoji, $F(2, 194) = .085$, $p = .919$, $\eta^2 = .001$.

By-Item-Analysis

A by-item-analysis was conducted to see if there were differences across sentences. An ANOVA revealed that there was not a significant difference between the 12 different sentences and the ratings they received, $F(11, 60) = .122$, $p = 1.00$, $\eta^2 = .022$. This means that the ratings were because of the kinds of emojis and the familiarity, and not because of bias in the sentences chosen for the experiment.

Discussion

The current pandemic has caused changes, including changes in communication. Even before COVID-19, society was seeing an increase in online-communication, but because COVID-19 hindered in-person communication, it increased the amount of online-communication. With this hinderance of in-person communication, some of the normal prosody that is a part of face-to-face communication with an individual was lost. I was interested in understanding more about emojis and if they can help give prosody to a sentence through

perceived emotion. Specifically, this study examined, emoji usage, emotion ratings of emojis, how COVID-19 affected emoji usage and emotion rating, and if different kinds of emojis could change the emotional perception of a sentence. Finally, the study examined the effects of gender on interpretation of emoji and familiarity on sentence emotion perception.

The first hypothesis stated that college students would have a change in their usage of emojis after the onset of COVID-19. In general, the participants reported that they did not use emojis differently and that they did not perceive the emotions of emojis differently. Although, when asked to rate whether they used specific emojis more or less often during the pandemic, participants reported they used more frowny-face emojis and less smiley-face emojis. The second hypothesis stated that if participants were women then they would use more emojis, but men used more emojis in this study than women. The third hypothesis stated that depending on the type of emoji present in a sentence, participants would rate the emotion of the sentence differently. The study found that a smiley face emoji made a sentence appear more positive, a frowny face emoji made a sentence appear more negative and no emoji made a sentence appear more neutral. The final hypothesis stated that participants would rate sentences differently depending on familiarity, and this study showed that a sentence said to come from a more familiar person was rated as more positive than a sentence said to come from an unfamiliar person.

A past study revealed that even before COVID-19 there had been an increase in online communication, but this same study showed that emojis were not being used by many of the participants (Byron, 2008). While this current study did not examine online communication as a whole, it did see how many college-age students used emojis in their online communication. This current study found that most participants do use emojis and that most had some daily usage of

emojis in their online communication compared to Byron's past study (Byron, 2008). This parallels more recent research that show an increase in emoji usage (Alshenqeeti, 2016; Chandra Guntuku, Li, Tay & Ungar, 2019; Pavalanathan & Eisenstein, 2015). This means that examining the impact of emojis would be relevant to today's society because they are being used more often.

In addition, past studies revealed that nonverbal cues, like emojis, can in fact portray emotion (Byron, 2008; Derks et al., 2008; Kalman & Gergle, 2014; Thompson et al., 2016). This current study revealed that emojis could portray a more positive or a more negative emotion. Furthermore, all of the emojis with a mouth slanted downward were perceived as being more negative and all the emojis with a mouth slanted upward were perceived as being more positive. The emojis that were perceived as being neutral did not have any curve to the mouth, such as the sleepy emoji. Only the scared, small mouth emoji did not match these findings, since it had no curvature but was significantly more positive than the neutral rating. Further research could be done to see if the mouth is what gives emojis their perceived emotion and if there are other key features of emojis that suggest a certain emotion.

Furthermore, future research should be conducted to see if emojis can help individuals who may have cognitive impairments and may have a hard time conveying their intentions with words. Individuals with Autism, Williams Syndrome and Down Syndrome have a hard time comprehending and producing verbal conversation (Hoff, 2014). These individuals, especially those with Williams Syndrome, pay attention to nonverbal cues and facial expressions (Hoff, 2014; Jones, Bellugi, Lai, Chiles, Reilly, Lincoln & Adolphs, 2000). This may mean that using emojis could help individuals with cognitive impairment convey their intentions and how they are feeling, and future research should be conducted in this area.

There were some key findings when examining the effect of COVID-19 on emoji usage. While many participants did not report a change in their emoji usage, when given a list of emojis and asked to pick which ones were seen as more positive or negative during COVID-19 there was some pertinent findings. Participants revealed that they were using more emojis that had a negative emotion attached to them, like the crying three-tears emoji and the frowny emoji. Participants also said that they were using less emojis that had a more positive rating, such as the smile tongue-out emoji and the smiley emoji. A future study could be conducted to see why people choose to include emojis in their texts and why they may have changed as a result of COVID-19. Furthermore, these choices in emojis could parallel the increase in depression, anxiety, neuroticism and secondary traumatic stress that has been correlated with COVID-19 (Elhai, Yang, McKay & Asmundson, 2020; Gallagher, Zvolensky, Long, Rogers & Garey, 2020; Gubler, Makowski, Troche & Schlegel, 2020; Taylor, Landry, Paluszek, Fergus, McKay & Asmundson, 2020; Zhao & Zhou, 2020). The negative stress and emotions that are affecting society during COVID-19 could be what is causing people to use more or less of these types of emojis. For example, a past study found that social media usage can predict depression (De Choudhury, Gamon, Counts & Horvitz, 2013). Future research should be done to see if there is a correlation between the effects of COVID-19 on one's mental health and their choice of emojis.

Furthermore, past studies have revealed that emojis can portray emotions of anger and happiness (Thompson et al., 2016; Derks et al., 2008; Kalman & Gergle, 2014). This current study examined if emojis could alter the emotional interpretation of an entire sentence. This study found that emojis can impact how participants interpret a sentence, with a smiley emoji making a sentence appear as being more positive and a frowny emoji making a sentence appear

as being more negative. This means that if someone is trying to get an emotion across with an ambiguous sentence, an emoji may help reveal their intentions.

Past studies have shown that familiarity can affect the number of emoticons used, with more emojis being used when communicating with a more familiar person (Derks et al., 2008). While this current study did not focus on the number of emojis used as an aspect of familiarity, it did examine if familiarity affected the emotion rating of a sentence. The results revealed that a person does perceive sentences more positively when they are from a familiar person. This may be because unfamiliar people do not tend to use emojis in their information broadcasted online or when contacting people directly. If more businesses, campuses and other companies want to try and emphasize an emotion in a sentence, adding an emoji, if appropriate, may better convey their intentions and it may get people more comfortable with them using emojis. Future studies should be conducted to see if emojis can help businesses, campuses and other organizations portray their intentions. Furthermore, a future study should examine what the right amount of emoji usage is to get the best results.

Finally, past studies have found that when it comes to social interaction women use more emojis compared to men (Byron, 2008; Derks et al., 2008; Walther & D'Addario, 2001). For the current study, this was not the case. Men were found to use emojis more often than women and were found to perceive the smile tongue-out emoji and smiling-eyes emoji as being more positive. This may be generational, since the previous studies were conducted almost 12 years ago, and more men may be using emojis today. A future study should be conducted to see if there is a shift in gender differences in emoji usage, or no gender differences, as men are beginning to text and communicate more through online communication.

This current study had several limitations. One limitation was that it was only given to college-aged students. To get a better idea of how emojis are affecting society's communication as a whole, it should be given to a larger array of people. Secondly, this study only used three emojis to examine if emojis gave emotion to a sentence. There should be another study that sees how more kinds of emojis affect sentences, and if there are even more emotions that they can portray besides positive and negative. Furthermore, this study only had one emoji placed in the sentence. It did not have multiple emojis strung together, or even multiple emojis placed throughout a sentence. By including a different variety of emojis, the results may differ. In addition, the perception of change in emoji usage was subjective recall and there may have been limitations in the accuracy of their recall. Finally, this study only contained emojis similar to faces. If other emojis were used that were not face related, it would show if only face emojis add emotion, or if other kinds of emojis could add emotion to a sentence.

Conclusion

It is important to understand how emojis are being used because society is becoming more involved with online communication, especially during the pandemic. Without cues from speaking, it may be hard to interpret the meaning of the online messages received. If more research is done on emojis, then a relationship between emojis and emotions could be created helping give some form of emotion, similar to prosody, in online communication. Once this connection is understood, society may be able to utilize emojis to aid in both formal and personal communication.

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Table 1*Emoji Usage Rating*

Usage	Rating	Percent
Not at all Likely	1.00	4.12
	2.00	11.34
	3.00	31.96
	4.00	44.33
Every Text Has emojis	5.00	8.25

Table 2*Analysis of Perceived Emotion Compared to Neutral*

	<i>t</i>	df	Sig. (2-tailed)	Cohen's <i>d</i>
	-28.112	97	.000	-2.84
	-22.394	97	.000	-2.26
	28.534	97	.000	2.88
	-12.433	97	.000	-1.26
	-14.675	97	.000	-1.48
	18.443	97	.000	1.86
	22.540	97	.000	2.28
	-3.002	97	.003	-0.30
	16.226	97	.000	1.64
	-23.266	97	.000	-2.35
	-.553	97	.582	-0.06
















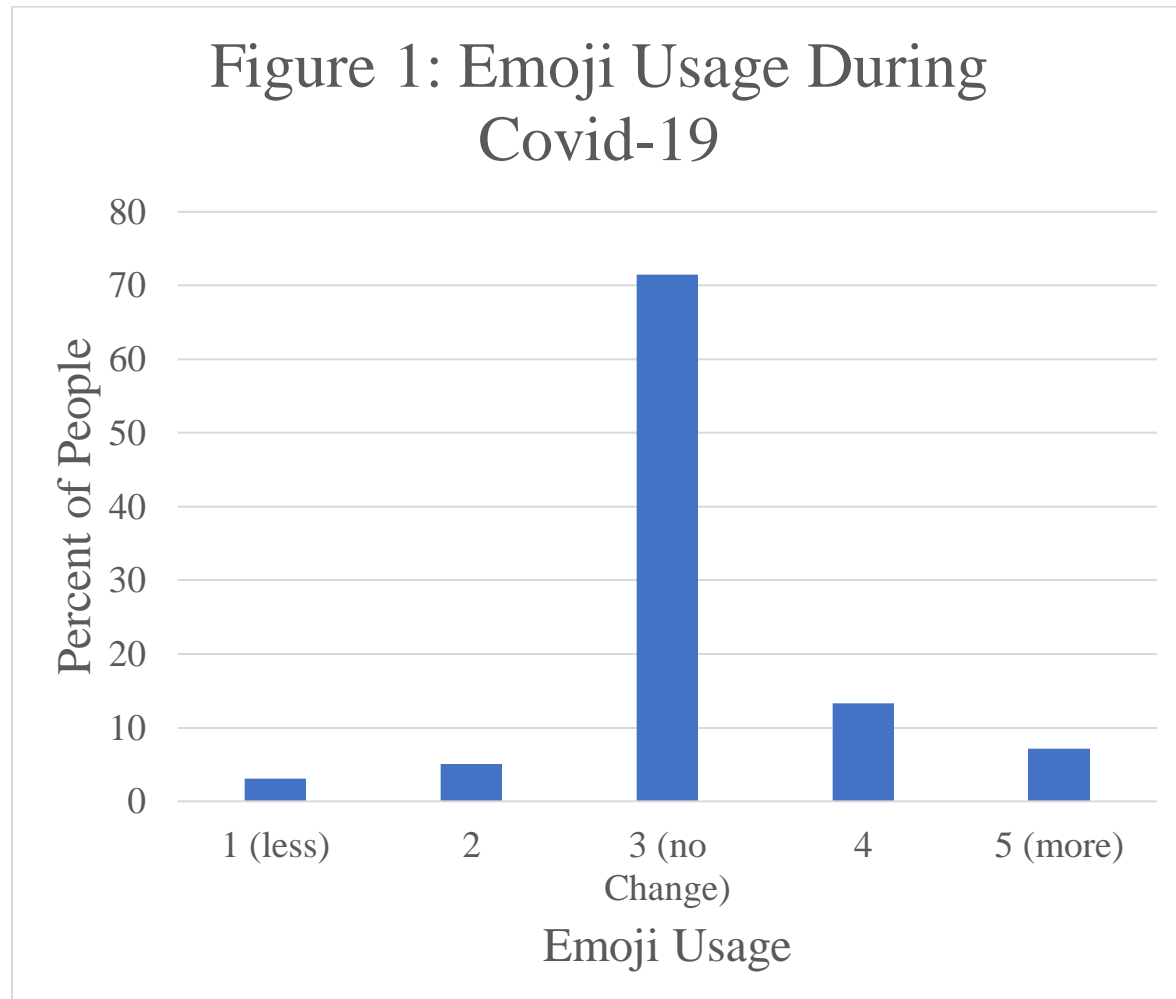
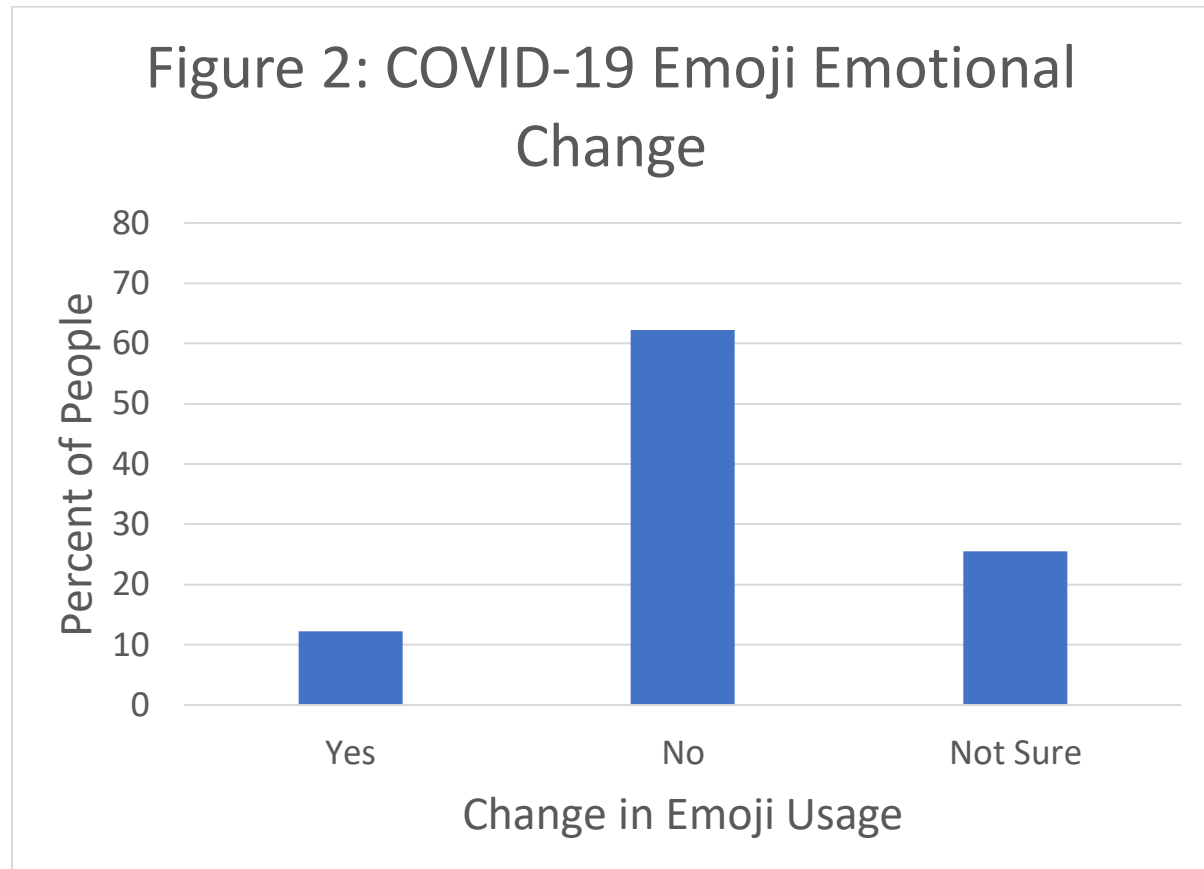
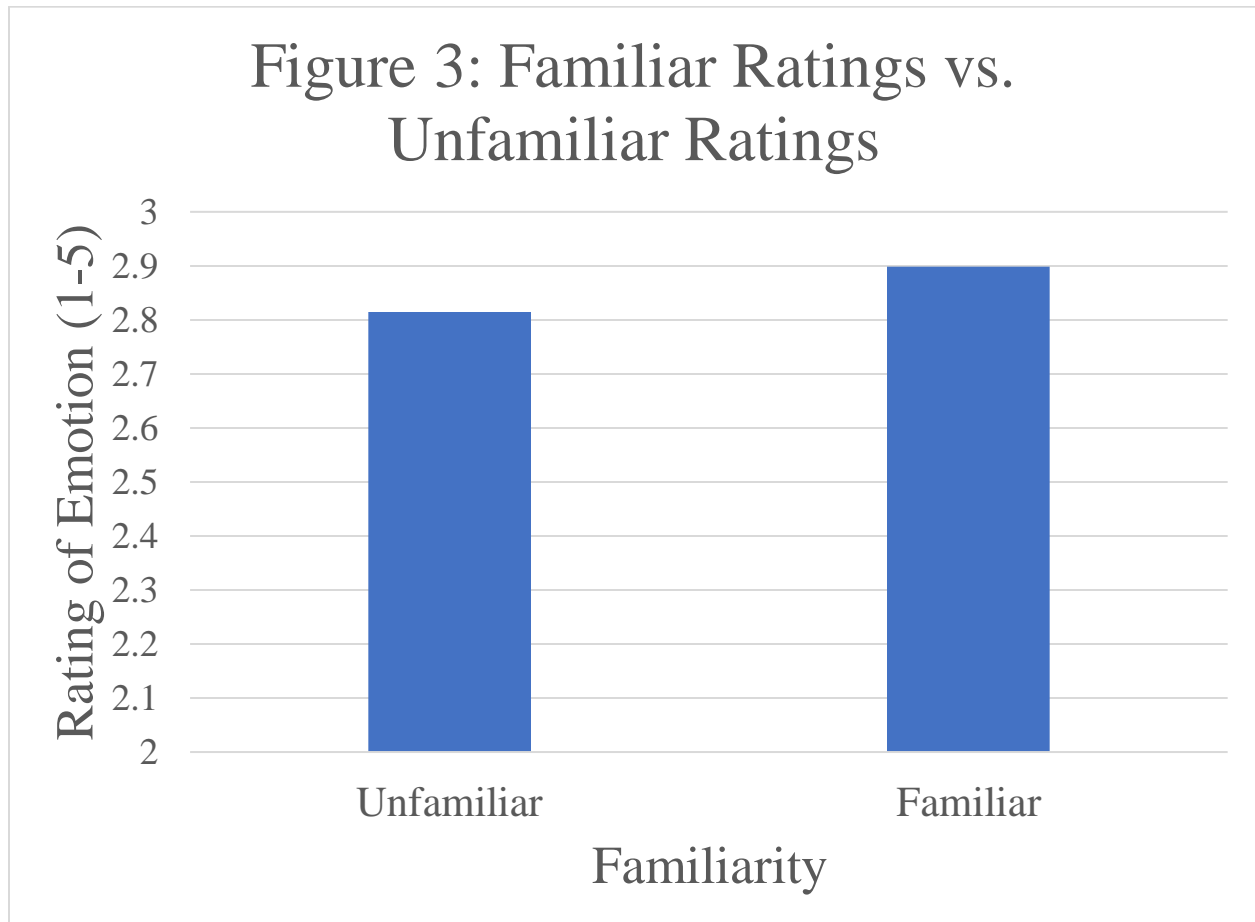
	16.789	97	.000	1.70
	20.635	97	.000	2.08

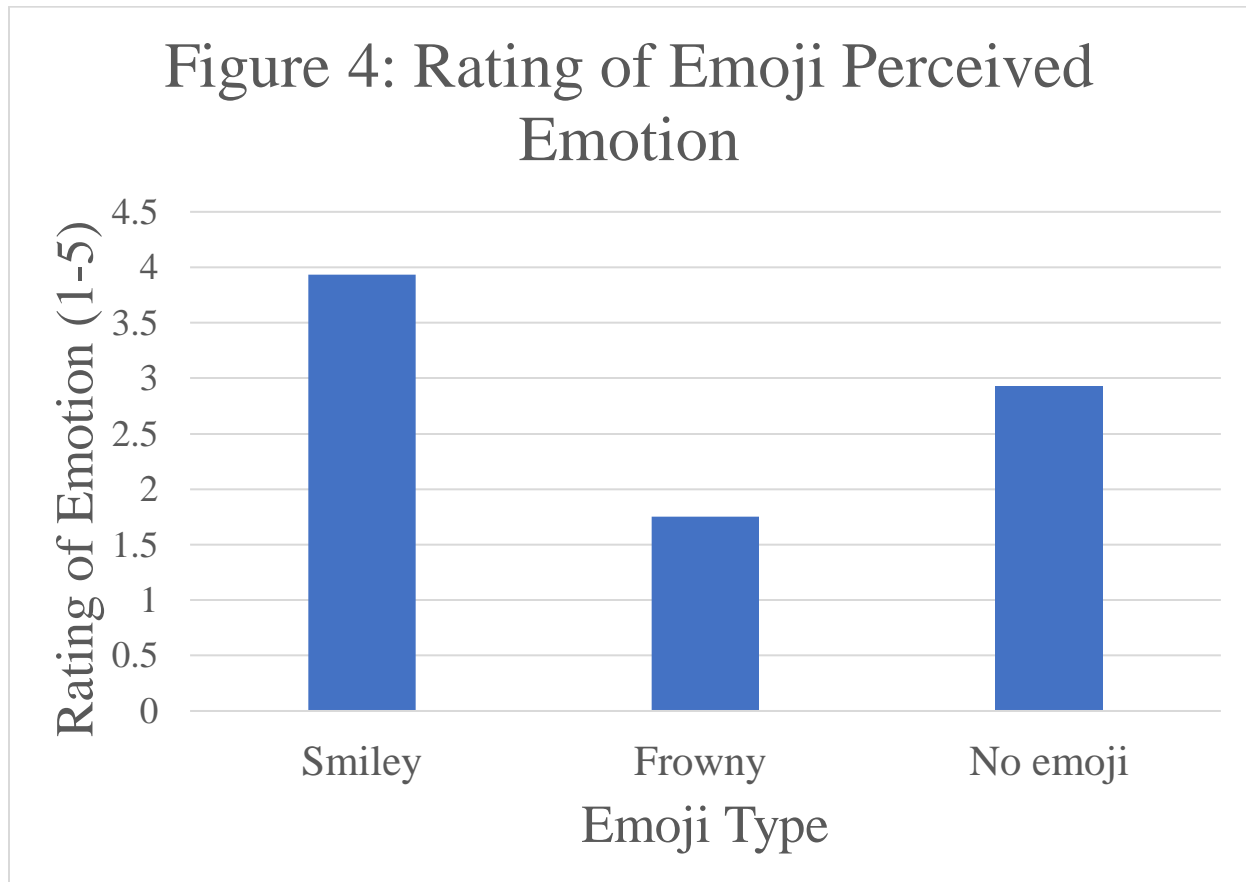
Table 3
Average Rating of Emotion for Each Emoji

	Negative:						Neutral:	Positive:					
Emoji													
Mean	1.26	1.45	1.47	1.66	1.98	2.85	2.96	4.36	4.38	4.42	4.58	4.64	4.84
Std. Deviation	.61	.66	.68	1.06	.69	.50	.73	.83	.74	.84	.76	.72	.64








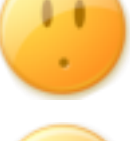












Appendix A: Emojis Given in the Questionnaire

1.  (angry)
2.  (crying one-teared)
3.  (heart eyes)
4.  (crying three-tears)
5.  (scared)
6.  (winky)
7.  (big smile)
8.  (scared, small mouth)
9.  (smiley)
10.  (frowny)

11.  (sleepy)

12.  (smile tongue-out)

13.  (smiling-eyes)

14. If the appropriate emoji(s) is not in the list above feel free to describe or insert it below if you can:

15. N/A


Appendix B: Sentences Included in the Experiment

1. Their school got canceled for a week
2. I saw Sally today at the store
3. The weather was hot today
4. I went and saw the new movie
5. I went to the doctor today
6. I listened to country music on the radio today
7. School starts in two weeks
8. You got a hair cut
9. I had class at noon today
10. I wake up at 7:00 am for work every day
11. Can you clean the dishes next because the sink is getting full
12. I have to leave the party now

*Each of these sentences appeared three times in both the familiar and unfamiliar condition.

They contained either a smiley-face emoji at the end, a frowny-face emoji at the end or no emoji at the end.

Appendix C: Emojis in the Experiment

1.  (Frowny Emoji)

2.  (Smiley Emoji)